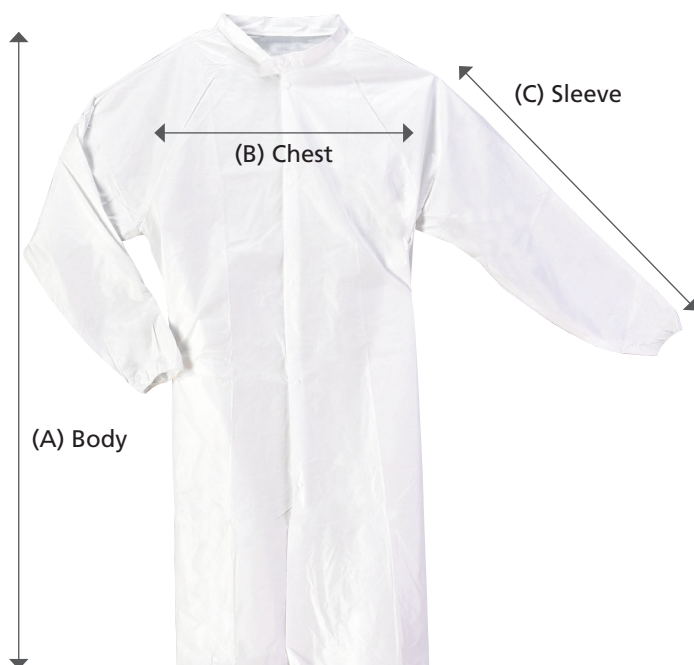


## VWR® PROTECTION APPAREL PRODUCT SPECIFICATIONS

### VWR Advanced Protection SPP Frocks

- Durable Fabric with Excellent Breathability and Water Vapor Transmission Rate
- Significant Fluid and Particulate Barrier: 99.9% Bacterial Filtration Efficiency
- Particle Shedding: Level II Helmke Drum Classification
- Soft, Cloth-Like Fabric

VWR Advanced Protection SPP Frocks are manufactured from a medium-weight spunbonded polypropylene (SPP) fabric that provides significant fluid and barrier protection. These garments exhibit excellent water vapor transmission to optimize breathability and user comfort. Frocks are rigorously tested and manufactured in an ISO Certified facility under stringent process controls to ensure that each product meets exacting quality standards and performs to specification. Our products are lot controlled and validated through independent lab testing. Appropriate for ISO 6 and higher.



### Frock Dimensions

Size	S	M	L	XL	2X	3X	4X
Body (A)	40½"	42½"	43½"	46"	47½"	51½"	52½"
Chest (B)	21¾"	22¾"	23½"	24¾"	26½"	29"	29½"
Sleeve (C)	33½"	34½"	35½"	36½"	37½"	40"	41"

### VWR Advanced Protection SPP Frocks

Size	Cat. No.	Case of
<b>White</b>		
Small	414004-410	25
Medium	414004-407	25
Large	414004-406	25
X-Large	414004-404	25
2X-Large	414004-405	25
3X-Large	414004-408	25
4X-Large	414004-409	25

To order, visit [vwr.com](http://vwr.com) or call your VWR Sales Representative today.

# Material Properties for VWR® Advanced Protection SPP Frocks

Test Item	Result	Test Standard	Test Description
PHYSICAL PROPERTIES			
Particle Shedding (Helmke Drum)	Level II	IEST-RP-CC003.3	Garments are tumbled in a stainless steel drum for 10 minutes. Particles are then counted with a laser particle counter.
Weight (g/m²)	56	ASTM D3776	Measurement of fabric mass per unit area (weight).
Thickness (mm)	0.21	ASTM D1777	Measurement of fabric thickness.
TENSILE STRENGTH (AVG. LBS./IN.)			
Warp	21.7	ASTM D5034	Covers the grab and modified grab test procedures for determining the breaking strength and elongation of textile fabrics. Provisions are made for wet testing.
Filling	25.0		
TEARING STRENGTH (AVG. LBS./IN.)			
Lengthwise Yarns	3.4	ASTM D2261	Measurement of the tearing strength of textile fabrics by the tongue (single rip) procedure using a recording constant-rate-of-extension-type (CRE) tensile testing machine.
Widthwise Yarns	4.8		
BARRIER PROPERTIES			
Bacterial Filtration Efficiency*	99.9%	ASTM F2101	Measurement of the filtration efficiency of the fabric using a challenge organism of Staphylococcus aureus.
Water Resistance	Pass	AATCC Method 42	Measures the degree to which the material is a barrier to liquids.
Synthetic Blood Penetration Resistance	Pass	ASTM F1670-08	Measures the resistance of chemical protective clothing materials to penetration by liquids.
COMFORT PROPERTIES			
Water Vapor Transmission Rate (Avg. g/m²/24 hrs.)†	777	ASTM E96	Measurement of the rate at which the fabric transfers water vapor under appropriate conditions.
Delta P Breathability (mmH₂O/cm²)	>102	MIL-M-36954C	Differential Pressure (Delta-P) is the measured pressure drop across material. Delta-P determines the resistance of the material to air flowing through. Pressure drop also relates to the breathability and comfort.
Air Permeability (cu. ft./min./sq. ft.)	0.06	ASTM D737	Measurement of air permeability to indicate breathability of the fabric.
CHEMICAL RESISTANCE			
Sulfuric Acid (70% Concentration)	Pass	ASTM F903	Measures the barrier effectiveness of materials used for protective clothing, and specimens from finished items of protective clothing (such as seamed and other discontinuous regions), against liquids.
Phosphoric Acid (85% Concentration)	Pass		
Hydrochloric Acid (37% Concentration)	Fail		
Household Bleach (100% Concentration)	Fail		

**All test results provided by independent third-party testing laboratories located in USA.**

**WARNING:** These garments and associated materials are not suitable for use in some environments containing chemicals and/or hazardous agents. It is the responsibility of the user to determine the level of risk in a particular environment and the proper personal protection equipment needed. Garments manufactured from synthetic non-woven material may generate static electricity. Garments that contain an anti-stat treatment are not intended to be used as a safety feature. These garments are not recommended to be used in a flammable and or explosive environment. Contact VWR International for garment/fabric safety data. The application of these products is out of VWR International's control. Therefore, VWR International, LLC makes no warranties, expressed or implied, and assumes no liability as to the performance of these products for a particular use. Caution: Avoid heat and/or open flame.



1.800.932.5000 | [vwr.com](http://vwr.com)

Prices and product details are current when published; subject to change without notice. | Certain products may be limited by federal, state, provincial, or local regulations. | VWR makes no claims or warranties concerning sustainable/green products. Any claims concerning sustainable/green products are the sole claims of the manufacturer and not those of VWR International, LLC. All prices are in US dollars unless otherwise noted. Offers valid in US and Canada, void where prohibited by law or company policy, while supplies last. | VWR, the VWR logo and variations on the foregoing are registered (®) or unregistered trademarks and service marks, of VWR International, LLC and its related companies. All other marks referenced are registered by their respective owner(s). | Visit [vwr.com](http://vwr.com) to view our privacy policy, trademark owners and additional disclaimers. ©2014 VWR International, LLC. All rights reserved.